

We Claim:

~~Sub B¹~~

(1) A quick-donning full face oxygen mask for use in oxygen depleted environments and environments contaminated by smoke or other pollutant comprising:

5 a flexible face seal, said face seal including a pliable, flexible periphery conformable to a wearer's face, said face seal further including a plurality of mounting points (for an inflatable harness attached to said face seal), said face seal further including means to attach an oxygen supply regulator and means to mount a
10 flexible optical lens in the region overlying the eyes of the wearer, said lens surrounded by said face seal;

~~Sub B²~~ said flexible lens sealingly attached to said face seal at its periphery to thereby bond and seal said lens to said face seal;

15 said inflatable harness including at least one tube connected to said oxygen regulator and supplied oxygen by said regulator, said tube extending around the rear of the head of the wearer and attached to said face seal by said attach points, said harness further including
20 adjustable straps attached to said tube and to said face seal at position which allow the adjustment of the harness for size and comfort by the user; and

25 passages between said regulator and the interior of said face seal to provide oxygen or other breathing gas to said user, a portion of said breathing gas being conducted to the interior surfaces of said lens to prevent fogging, said mask seal and said lens being of sufficient flexibility to allow said mask to be rolled into an essentially cylindrical configuration for storage.

(2) The mask of Claim 1, further comprising at least one microphone mounted within said mask seal to provide communications when said mask is being worn.

~~Sub B²~~

(3) The mask of Claim 1, wherein said harness further comprises a plurality of inflatable tubes

connected to said oxygen regulator and adjustably
connected to said mounting points on said mask seal by
5 said adjustable straps.

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~~4~~. The mask of Claim 1, wherein said
inflatable tubes comprise flexible elastomeric tubes
covered with a flame retardant material.

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~~5~~. The mask of Claim ³~~4~~, wherein said flame
retardant material is Nomex®.

Sub B³

6. The mask of Claim 1, wherein said flexible
lens further comprises a flexible lens made of transparent
silicone material having an abrasion resistant coating
deposited on the surfaces of said lens.

7. The mask of Claim 1, wherein said regulator
includes means to adjust the pressure of gas delivered to
said harness tube.

8. An oxygen mask for use by flight crews
during decompression or the like which comprises:

a flexible face seal surrounding a flexible lens
mounted within said face seal, said face seal further
5 comprising means to mount a pressure regulator supplying
breathing gas to the wearer, said pressure regulator
connected to a source of breathing gas, said pressure
regulator further including means to supply breathing gas
to an inflatable harness mounted on said face seal, said
10 inflatable harness including at least one flexible tube
passing around the rear of the head of the wearer and
connected to said face seal by straps and mounting
attachments on said face seal, said mask being capable, by
virtue of the flexible lens and mask seal, of being rolled
15 into a relatively small volume for storage on the flight
deck of an aircraft.

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~~9.~~ The mask of Claim ⁷~~8~~, wherein said flexible lens is coated with an abrasion resistant coating.

~~SUB B4~~
10. The mask of Claim 8, wherein said straps include means to adjust the length of said straps to accommodate various head sizes.

11. The mask of Claim 8, further comprising at least one microphone mounted within said mask seal to provide communications when said mask is being worn.

~~SUB B5~~
12. The mask of Claim 8, wherein said harness further comprises a plurality of inflatable tubes connected to said oxygen regulator and adjustably connected to said mounting points on said mask seal by
5 said adjustable straps.

13. The mask of Claim 8, wherein said inflatable tubes comprise flexible elastomeric tubes covered with a flame retardant material.

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~~14.~~ The mask of Claim ¹¹~~13~~, wherein said flame retardant material is Nomex®.

~~SUB B6~~
15. An oxygen mask for use by wearers exposed to an oxygen depleted or polluted environment, said mask comprising:

5 a combination face seal and flexible lens molded as a single unit, said mask further comprising means to receive a pressure regulator in said mask for providing breathing gas for the wearer and gas to inflate an inflatable harness passing around the head of the wearer and attached to said face seal by straps attached
10 to said harness and said mask.

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~~16.~~ The mask of Claim ¹³~~15~~, wherein said flexible lens is coated with an abrasion resistant coating.

Sub B7

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(17). The mask of Claim 15, wherein said straps include means to adjust the length of said straps to accommodate various head sizes.

18. The mask of Claim 15, further comprising at least one microphone mounted within said mask seal to provide communications when said mask is being worn.

Sub B7

(19). The mask of Claim 15, wherein said harness further comprises a plurality of inflatable tubes connected to said oxygen regulator and adjustably connected to said mounting points on said mask seal by said adjustable straps.

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(20). The mask of Claim 15, wherein said inflatable tubes comprise flexible elastomeric tubes covered with a flame retardant material.

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21. The mask of Claim ¹⁷~~20~~, wherein said flame retardant material is Nomex®.

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